

Remarks

Claims 1-27 are pending in this application. Applicants have not amended the claims. Applicants respectfully request favorable reconsideration of this application.

The Examiner rejected claims 1-27 under 35 U.S.C. § 103(a) as being unpatentable over U.S. patent 4,218,834 to Robertsson in view of U.S. patent 6,386,879 to Varshneya.

The combination of Robertsson and Varshneya does not suggest the invention invention as recited in claims 1-27 since, among other things, the combination does not suggest a weapon simulation system that includes a weapon including a calculating unit configured to calculate an imagined trajectory of simulated ammunition, a processor configured to determine a geographical position of the weapon, and a transmitter operative to include in the electromagnetic waves information related to coordinates in the three-dimensional space for the calculated ammunition trajectory. Rather, Robertsson suggests a shooting system that includes a laser transmitter that produces three elongated lobes. The transmitter sweeps the lobes back and forward. Each lobe transmits pulses that can be reflected by prisms placed on the target. When a lobe in the shooting system measures a reflection from a prism of a target, the shooting system starts to transmit position information. This position information is amended for each pulse as the lobe is displaced sideways during the sweep. The information is only transmitted when the simulated projectile is at the right distance in relation to the prism, that is, when the simulated ammunition passes the measured target.

Robertsson is based on the combination of physical propagation of the three lobes and that information related to the trajectory is only transmitted when the prisms are illuminated and at the right distance from the shooting system. Thereby, each detector is provided with unique information. Accordingly, a detector placed at another prism is provided with completely different information.

Contrary to the Examiner's assertion, col. 13, lines 22-62, of Robertson does not suggest including in electromagnetic waves information related to coordinates in the three-dimensional space for the calculated ammunition trajectory. For example, at col. 13, lines 37-55, Robertsson state that the information included in the beam is a relationship between the momentary angular position of the beam and the hypothetical projectile position. Along these lines, this passage states,

At the instant when a reflection of each beam is received at the weapon location, reflected from a reflector 14, the beam is modulated to **encode information concerning the relation- ship between hypothetical projectile position and the momentary angular position of that beam**, and since the modulated beam falls upon the co-located detector 29 at the same instant, the information carried by the beam is available at the target body. Normally, however, such a transmission is made only when the reflector 14 intercepted by a beam is found to be at a range distance from the weapon location which is equal to - or substantially equal to - the then-existing calculated range position of the imaginary projectile relative to the weapon location. In this way the beams are employed only to transmit

information that is of practical significance to the target body receiving it so that there is no need to process large amounts of unnecessary information at the target position (emphasis added).

On the other hand, Varshneya suggests a three step sequence including RF and GPS, wherein the last step is a point-to-point optical transfer of information. For example, Varshneya suggests 1) illuminating a target with laser pulses, 2) transmitting information from the target to the weapon system using a radio channel, and 3) transmitting information about the projectile at the shooting instance with laser. The target then takes over and makes hit assessment. Thus, Varshneya represents classical way of simulating, wherein the shooting system communicates back and forward with the target.

Varshneya also does not suggest at least one target including a hit simulation system including a receiver configured to receive the transmitted electromagnetic waves from the weapon and a processor configured to determine whether a target has been hit based on the information related to coordinates in the three-dimensional space for the calculated ammunition trajectory in the received electromagnetic waves.

Rather, Varshneya suggests a target system that determines an impact point for the ammunition, as described at, for example, col. 2, lines 16-19 and 11-14. As described at col. 4, lines 58-62, the impact point is determined by running a ballistic simulation of the ammunition trajectory, but still the calculation is performed at the target system, not the system of the weapon. According to Varshneya, the calculating unit at the target configured to calculate an imagined trajectory of the simulated ammunition.

Additionally, Varshneya does not suggest including in electromagnetic waves information related to coordinates in three-dimensional space for a calculated ammunition trajectory. This follows from the fact that Varshneya does not suggest a weapon that calculates coordinates in three dimensional space for the calculated ammunition trajectory. Varshneya only suggests including in the electromagnetic waves position information related to the position of the shooter's system, not to the trajectory of the simulated ammunition.

The claimed invention relates to a weapon effect simulation system, wherein a target can receive electromagnetic waves from a shooter and evaluate whether the target has been hit based on the ammunition trajectory information of the electromagnetic beam received from the shooter. Therefore, unlike the combination of Robertson and Varshneya, the claimed invention includes more information in the beam, thus achieving one way communication with the target.

In view of the above, the references relied upon in the office action does not suggest patentable features of the claimed invention. Therefore, the references relied upon in the office action do not make the claimed invention obvious. Accordingly, Applicants submit that the claimed invention is patentable over the cited references and respectfully request withdrawal of the rejection based on the cited references.

If an interview would advance the prosecution of this application, Applicants respectfully urge the Examiner to contact the undersigned at the telephone number listed below.

The undersigned authorizes the Commissioner to charge fee insufficiency and credit overpayment associated with this communication to Deposit Account No. 22-0261.

Respectfully submitted,

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